REMARKS

Status of Claims

Claims 1 – 28 were original in the application. Claims 1 – 20, 22 – 24, 26 and 28 have been amended in this amendment. Claims 1 – 28 are submitted for examination on the merits.

Amendments to the Specification

The Office Action appears to be largely directed to the issue of use of the terminology of 4-DOF and 2-DOF to label certain elements of the claims and invention. As stated in the application:

> "The conventional micromachined rate gyroscopes operate on the vibratory principle of a two-degrees-of-freedom (DOF) system with a single proof mass suspended by flexures anchored to the substrate, which allow the mass to oscillate in two orthogonal directions, namely the drive and the sense directions."

In the invention the single proof mass in the gyro is replaced by or divided into three parts. As shown schematically in Fig. 2 the first part or mass moves only in the drive direction. The second and third parts move together in the drive direction and move independently in the sense direction.

The Examiner objects to use of the term 2-DOF to a multiple mass device. The applicant respectfully submits that "two-degrees-of-freedom (DOF) system" refers to a system in which the system is mathematically modeled with two variables of movement. In terms of mathematical analysis of the dynamics of the gryo, if mass A and mass B+C move in orthogonal directions the dynamics of A and B+C must be modeled to that extent as a 2-DOF system. Similarly if masses B and C move in orthogonal directions

the dynamics of B and C can be modeled to that extent as a 2-DOF system. When the system is treated as a system of A, B+C, B and C, then mathematically, then it can be said that a 4-DOF system is being modeled.

Therefore, the terminology is clear, but the Examiner objects to labeling the elements of the invention to correspond to the mathematical modeling of the system. The reference to 4-DOF can be deleted without loss of generality or clarity and reference made simply to a nonresonant micromachined gyroscope. Similarly, the a 2-DOF drive-mode oscillator; and 2-DOF sense-mode oscillator can be referred to simply as a drive-mode oscillator; and sense-mode oscillator without loss of generality or clarity.

A substitute specification is provided together with a red-lined copy showing the amendments. Only the labels 4-DOF and 2-DOF have been removed and description use of these terms have been retained where appropriate.

Rejection Pursuant to 35 USC 112

Except as discussed below the rejection of the claims due to indefiniteness as asserted by the Examiner have been in each instance responsively addressed by amendments.

The Examiner rejected claim 17 on the ground that it was unclear how the intermediate mass was intermediate. The Coriolis force arises in the drive mode oscillator from the second and third masses, which are collectively driven by the first mass. However, since by design the second mass is much larger than the third mass, the Coriolis force originates for mainly from the second mass. However, the sense

signal is not taken from the movement of the collective movement of the second and third masses in the sense direction, but from the independent movement of the third mass in the sense direction. The Coriolis force which gives rise to the sense signal is as described in detail in the specification is effectively due to the much larger second mass. This second mass is neither the driven mass 16 nor the sense mass 20, but an intermediate mass 18 coupled through flexures to both masses 16 and 20. The second mass is a mass which is dynamically intermediate between the first (driven) and third (sense) masses.

Rejection Pursuant to 35 USC 103 or 102

The Examiner asserted no rejections based on art.

Applicant respectfully requests advancement of the claims to allowance.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
on July 27, 2005

Signature

July 27, 2005

Respectfully submitted,

Daniel L. Dawes
Registration No. 27,123
Myers Dawes Andras & Sherman LLP
19900 MacArthur Blvd., 11th Floor
Irvine, CA 92612
(949) 223-9600

Amendments to the Drawings

The drawings were submitted as informals. Each of the drawings have been amended in form, but not in content, to comply with the Examiner's objections and are attached to the Appendix.